THE *Annalen der Hydrographie*, Heft v., contains an important article on the Movement of Water in Rivers, based on river observations at various depths of water, made at the lightship station on the Genius Bank, in the Jade, from October 17 to December 10, 1878.

M. GUSTAVE MOYNIER, as Director, and M. Ch. Faure, as Editor, announce the publication of a new geographical journal—*L'Afrique*—entirely devoted to Africa. It is proposed to embrace in it the gist of all that is important published anywhere relating to the continent with which the journal deals. It will be published monthly by M. Jules Sandoz, Geneva, the size being sixteen pages octavo.

AN *Annuaire des Sociétés de Geographie* will shortly be published in Paris.

WE learn from *Vanity Fair* that a party, of which Lady Florence Dixie was the only lady, has just returned from South America, where they "crossed many hundreds of miles of the wild and unexplored pampas of Patagonia, penetrating amidst the Cordilleras into splendid scenes hitherto unexplored and unseen by man."

THE *Bulletins* of a number of foreign societies are to hand The new number of the *Bulletin* of the Lyons Geographical Society contains, besides the annual report, the conclusion of M. Luciano Cordeiro's chapters on the first explorations of Central Africa and the Portuguese doctrine of African hydrography in the fifteenth century, and the first part of an essay on Central Asia, by Col. Debize. In this number he deals with Eastern Turkestan, illustrating his remarks with a sketch map of North-Western China and Kashgaria.—The last number of the *Bulletin* of the Société de Géographie Commerciale of Bordeaux contains a second paper on the subject of the commercial exploration of Ferlo, an almost wholly unknown region of Senegambia.—The May number of the *Bolletino* of the Italian Geographical Society contains a learned and able lecture by Prof. Marinelli, on Scientific Geography, in which he traces the progress of this department, and shows how comprehensive and important it is.—The last number of the *Bulletin* of the American Geographical Society (No. 2 of 1879) contains a paper by Major A. G. Constable on Afghanistan. Major Constable served in the English army in the former Afghan war.—The May number of the *Bulletin* of the Paris Geographical Society contains a full report of the proceedings at the recent Cook Centenary in Paris, including a descriptive catalogue, by Dr. Hamy, of the articles exhibited during the celebration, and the cartography and bibliography of Cook's voyages, by Mr. James Jackson. An accompanying map shows the routes followed by the English navigator in his various voyages.

## *NOTES*

FOR the fine plate of tubes in this week's number, illustrating the paper by Messrs. De La Rue and Müller, as well as for the numerous woodcuts, we are indebted to the liberality of Dr. De La Rue.

IT is gratifying to find foreign governments and societies so ready to show their appreciation of our eminent scientific workers. Last week we announced the election of Prof. Huxley as a Corresponding Member of the Paris Academy of Sciences, and now we have to chronicle a double honour just received by Prof. Stokes of Cambridge: the Emperor of Germany has conferred upon him the Order "Pour le Mérite," and the Paris Academy have elected him a Corresponding Member in the section of Physics in place of the late Prof. Ångström.

DR. DONDERS has been elected in the section of Medicine and Surgery in the same Academy, to succeed the late Prof. Ehrmann.

THE candidates whose names we have already given were elected Fellows at last Thursday's meeting of the Royal Society.

PROF. SIR C. WYVILLE THOMSON was last week compelled, from sudden indisposition, to relinquish his course of lectures at the University of Edinburgh. We are glad to be able to announce that he is now completely recovered. His medical attendants, however, deem it prudent that he should abstain from lecturing again this session. His large class of between 400 and 500 students has accordingly been entrusted to Prof. Alleyne Nicholson, of St. Andrews, who will conduct it during the remainder of the session. Though dissuaded from undertaking the heavy duties of his college work, Sir Wyville, we hope, will find strength to resume his labours amid the *Challenger* materials, so that this great work, for which the world is very patiently waiting, may suffer no serious delay.

PROF. WURTZ, the eminent French chemist, has been appointed a Member of the Council of the Legion of Honour.

THE arrangements for the annual meetings of the principal foreign associations are announced. The German Anthropological Society holds its yearly meeting at Strassburg on August 11, 12, and 13, and the fifty-second meeting of the German Association of Naturalists and Physicians will be held at Baden-Baden from September 18 to 24. The French Association for the Advancement of Science will hold its eighth session at Montpellier, commencing on August 28. The president is M. Bardoux, late Minister of Public Instruction. Applications are to be addressed to 76, Rue de Rennes, Paris. The American Association meets this year at Saratoga, on August 27, the President being Mr. George F. Barker, of Philadelphia.

EARTHQUAKES would seem to be plentiful and wide-spread at present. A Reuter's telegram, of date Messina, June 17, states that continual shocks of earthquake, attributed to the volcanic action of Mount Etna, have occurred in the neighbourhood of Santa Venere and Guardia, causing serious damage and considerable loss of life. Vesuvius is stated to be showing signs of activity. A distinct shock of earthquake is reported to have been felt on Monday at Tobermory, and other places in Mull, in the Hebrides. The shock passed from north-east to south-west. On the 7th inst. an earthquake of short duration was observed at Versailles at 10·55 P.M. There was a severe shock of earthquake in Costa Rica on the night of May 29. The cathedral and many of the principal buildings of San José were shattered, and much damage was done in other parts of the republic.

DR. J. C. DRAPER is at present in this country. He has been extending his researches on oxygen in the sun (see NATURE, vol. xix. p. 352), and has read papers on the subject at the Astronomical and Physical Societies.

WE regret to announce the death of Dr. Karl Neubauer, the eminent German chemist. Dr. Neubauer died on the night of June 1-2 at Wiesbaden, where for many years he had been working in the laboratory of Dr. Fresenius. The death is also announced of Dr. Justus Ulrich, Professor of Mathematics at Göttingen University, who died on May 30.

THE Committee on Electric Lighting, recently appointed by the House of Commons, have finished hearing evidence, and issued their Report, which is in substance as follows:—"That sufficient progress has been made with electricity as a means of lighting to encourage the belief that it has an important future before it, and not only for illuminating purposes, but as a source of power which may be wisely distributed and applied to mechanical purposes. The committee are of opinion that the electric light, even in its present state of development, can be advantageously used in large areas, open or inclosed, such as large halls, squares, or railway stations; but they do not think it has been so far matured as to be able to compete with gas for domestic purposes. They therefore do not recommend any legislation for applying the light to private purposes on the strength of its being practicable for large spaces and buildings, but they do recommend that no legislative restrictions shall be allowed to impede its further development. As to granting authority for adopting the electric light, the committee think there is already in existence sufficient power for applying it to open spaces and large centres; and, mentioning the diversity of views among the witnesses as to whether or not municipal bodies have power under existing statutes to break up streets for the purpose of laying electric light wires, they say that if such power does not exist it should be granted under proper regulations. They consider, however, that the time is not yet ripe for allowing private companies to break up streets in order to supply the electric light, but they advise that municipal authorities should receive all possible help for public lighting by electricity, and that the Legislature should be willing to give all reasonable facilities for extending the use of the electric light where proper demand for it arises. They consider further that for lighthouse purposes the electric light has established itself, but they have not been able to satisfy themselves from the evidence that electric lighting is economical as compared with gas.

THE success of the Jablochkoff lights at the Palais de l'Industrie is nightly increasing. The number of visitors exceeds 6,000 nightly, exclusive of press men, artists, and bearers of free tickets. The *salons* are rather more crowded than in daylight. No extinction at all has been noticed since the first night. The change of candles is effected by keys worked from the engine-house, and takes less than a second for each series of lamps. Several places of public entertainment in Paris are adopting the Jablochkoff light principally to avoid the heat which results from burning gas, and is so obnoxious in summer time.

AS an illustration of the combination of science and commerce we may mention a new idea that has lately been carried out by a Swiss firm of chocolate-makers. We are unable to say whether the chocolate *bon-bons* have any peculiar merit in themselves, but the attraction lies in the manner of packing, the sweetmeats being put up in boxes containing two layers of small packets put up in very ornamental wrappers with coloured designs, in series representing the various branches of natural history, such as birds, butterflies, fishes, fruits, flowers, and even palæontology and geography. Each box, containing about twenty small packets of chocolate, is accompanied with a concise descriptive treatise in French written by a competent naturalist. That on birds is thus described:—"After a pleasant general introduction on the utility and charming attraction of birds, and the necessity for the protection and preservation of many, a brief sketch is given of their properties of flight, structure, organs of sense, sight, smell, and voice, respiration, nests, eggs, and incubation, moulting, geographical distribution, migration, utility to man, and general classification. Instructions are also given for preparing and mounting bird-skins, and scientific descriptions are furnished of those birds chosen for illustration either for their beauty or brilliant plumage." A similar plan to the above is adopted in other branches of natural history.

HARTLEBEN of Vienna announces the publication of an Illustrated History of Writing, a popular account of the origin of writing, of speech, and of numbers, as well as the systems of writing of all peoples. The author is Herr Karl Faulmann. The work will be illustrated with numerous coloured plates as well as woodcuts.

THE *Patriot* of Angers relates that on June 10 an immense number of butterflies were observed flying above a part of the city called Le Mail. They were travelling at a little distance from the earth, and inconveniencing persons walking in the streets. The same phenomenon was observed in Alsace, at Bisheim, on the 8th. The Bisheim butterflies were so numerous, according to the *Journal d'Alsace*, that the light of day was obscured. Their colour was red, in places tinged with grey. On the 7th the commune of Wetzikon, in the canton of Zurich, was invaded by an immense swarm of butterflies a kilometre wide, and so long that the procession took two hours to pass. They flew from two to ten metres above the ground, and went off in a north-westerly direction. Swarms of grasshoppers have recently appeared in Armenia. News from Elisabetpol states that both the banks of the River Kur were completely covered with the insects, as far as Terter on the one bank, and as far as Akstafa on the other. All vegetation is devastated.

The *North German Gazette* states that a woman in the neighbourhood of Düsseldorf, who had been bitten by a mad dog, has been cured by Dr. Offenberg, by an injection under the skin of a dose of twenty centigrammes of curare.

THE village of Mariaweiler near Düren (Rhenish Prussia) proves to be a great field of *débris* of a Roman colony. A Roman villa has just been excavated there so that most of the apartments could be measured. An inscription in one of the rooms has not yet been deciphered. The Roman coins found at the place date down to the fourth century.

FOSSIL remains of a mastodont have just been found in Vienna on the Ottakringer Strasse. Prof. von Hochstetter himself undertook the excavation of the remains. With the exception of the jaw and teeth all the bones found are much decomposed, and it will be very difficult to preserve them.

A GENEVA correspondent writes that a meteor of remarkable brightness and size was seen on June 7, about 10 P.M., in the neighbourhood of that city. It was also seen at Neuchâtel, Zug, Milan, and over its entire course its path was sinuous, presenting a strange zig-zag form. Some who saw it speak of it as having the appearance of the full moon, giving out an iridescent or greenish light. Its path was from north-east to south-west. The meteor, according to the *Times* Geneva correspondent, was seen in several other parts of the Confederation and at St. Vittore Olona, in Lombardy. Four minutes after it finally disappeared, he states, there was heard a loud report, resembling a volley of artillery. A similar report was heard in the Valaisian Alps, and almost at the same time, according to the *Gazette de Lausanne*, a shower of aërolites fell into Lake Lugano, near Melide, causing violent undulations, and nearly overturning the boats of several fishermen who were returning to port.

ON Friday last a first trial was made at Woolwich of the new 100-ton gun. The shot with which it was loaded weighed 2,010 lbs. The gun was fitted with a gas check. Its diameter was very little less than that of the bore, which has a calibre of 17¾ inches, increasing to 19¾ inches in the powder chamber. The thickness of the metal at the muzzle is about 5 inches only, but at the breech-end the chamber is surrounded with a wall of iron 2 feet 5 inch through, making the maximum diameter 6 feet 6 inches. The gun is 36 feet in length, of which the bore occupies 33 feet, and the total length of gun and carriage when run out for firing is 44 feet. The cartridge, consisting of 440 lbs. of cube powder, strongly bound in canvas and stiffened by wooden bands, was rammed home, occupying 5 feet of the bore, and then followed the projectile, the length of which was 2 feet 8 inches. The gun was fired by electricity from the instrument-room, and recoiled a considerable way up the platform, but suffered no damage either to itself or the carriage. The screens registered a velocity of 1,590 feet per second, but the projectile was found to have broken up, which may have affected the result.

THE Mayor of Liverpool has given to the Council of the Iron and Steel Institute an invitation to visit that town in September, and a deputation from the Council of the Institute waited upon the Mayor at the Buckingham Palace Hotel on Saturday, when they discussed with him the preliminary arrangements and provisionally fixed September 24, 25, and 26 for the meeting, which will be the first held by the Institute in that town.

IN the annual report of the Deputy Master of the Mint, issued last week, we find some remarks on several points of scientific interest more or less intimately connected with the work of minting. Among these may be mentioned the adjustment of blanks by electrolytic agency, to which attention had been directed in former years. The process, originally advocated by Mr. Roberts, the chemist of the Mint, has already been employed on a large scale in the Indian Mint. The question of the change in the density of a metal by annealing is one of some importance in the operations of minting. The experiments commenced in 1877 showed that the effect of even moderate temperatures was appreciable, and the results of their continuation are given by Mr. Roberts. In connection with this subject, Mr. Fremantle remarks that it is interesting to turn to such experiments of M. Tresca on the flow of solids as have special reference to mint work, and to those which have been undertaken in the English Mint on the flow of molten metals through capillary tubes. It is hoped that the latter may ultimately throw light on the phenomenon of liquation.

THE *conversazione* of the Society of Arts will be held in the South Kensington Museum on June 25.

THE members of the International Telegraphic Conference were entertained at dinner on Tuesday night, and last night a *conversazione* was held in connection with the Conference. The labours of the Conference have been chiefly administrative and financial.

WE learn from the *Colonies and India* that rich deposits of gold have been discovered in various parts of Nova Scotia, where its existence has hitherto been hardly suspected. The most important discovery made has been near Bannockburn, in the township of Madoc, where a large nugget of gold of fine quality was recently found, and an extensive gold field is being opened out. Coal and iron are also plentiful in the province.

THE additions to the Zoological Society's Gardens during the past week include an Indian Antelope (*Antilope cervicapra*) from India, presented by the Hon. A Greville, 60th Rifles; a White-whiskered Paradoxure (*Paradoxurus leucomystax*) from the East Indies, presented by Mr. Carl Bock; two Common Paradoxures (*Paradoxurus typus*) from India, presented by Mr. G. Bradbury; a Common Magpie (*Pica caudata*), British Isles, presented by Mr. J. Loraine Baldwin, F.Z.S.; a Laughing Kingfisher (*Dacelo gigantea*) from Australia, presented by Mr. E. Hawkins; a Tuberculated Lizard (*Iguana tuberculata*) from the West Indies, presented by Dr. A. Stradling; a Caspian Ouaran (*Psammosaurus caspicus*) from Persia, presented by Commander J. Pratt, s.s. *Java*; a West African Python (*Python sebæ*) from West Africa, presented by Mr. G. H. Garrett; five Climbing Anabas (*Anabas scandens*) from India, presented by Mr. A. F. Dobson; a Tamandua Anteater (*Tamandua tetradactyla*), a Sun Bittern (*Eurypyga helias*) from South America, a Black-eared Marmoset (*Hapale penicillata*), a Brazilian Cariama (*Cariama cristata*) from South-east Brazil; a Crested Screamer (*Chauna chevaria*) from Buenos Ayres, a Daubenton's Curassow (*Crax daubentoni*) from Venezuela, a Negro Tamarin (*Midas ursulus*) from Guiana, a Spotted-billed Toucanet (*Selenidera maculirostris*), three Violet Tanagers (*Euphonia violacea*), two Saffron Finches (*Sycalis flaveola*), a Pileated Finch (*Coryphospingus pileatus*) from Brazil, a Great American Egret (*Andea egretta*), a Red and Yellow Macaw (*Ara chloroptera*) from South America, deposited; a Black Hornbill (*Buceros atratus*) from West Africa, a Green-winged Trumpeter (*Psophia viridis*) from Brazil, a Common Crowned Pigeon (*Goura coronata*) from New Guinea, two Orinoco Geese (*Chenalopex jubata*) from South America, six Melodious Finches (*Phonipara canora*) from Cuba, purchased; two Geoffroy's Doves (*Peristera geoffroii*), two Yellow-legged Herring Gulls (*Larus leucophæus*) bred in the Gardens.

## *THE RECENT HONORARY DEGREES AT CAMBRIDGE*

IT may interest our readers to see the terms in which the Public Orator of Cambridge University spoke of the eminent men of science on whom the degree of LL.D. was conferred on June 10, as we announced last week. Mr. Sandys spoke as follows of Sir William R. Grove:—

Iuris initium a natura esse ductum auctore Tullio accepimus; iuris peritiam summam cum intima rerum naturae cognitione esse consentaneam, non modo Baconis nostri exemplo confirmatum est, sed huius quoque iudicis auctoritate defenditur. Magnum profecto rerum naturae amorem testatur oratio illa, qua tredecim abhinc annos societatis Britannicae scientiarum finibus proferendis annui praesidis munus auspicatus, in universa rerum natura ordinem quendam serie perpetua continuatum inesse docebat; testatur oratio illa altera plusquam triginta abhinc annos primum edita, qua primus indicavit lucem, calorem, vim electricam, vim magneticam, mutuam rerum quae dicitur affinitatem, ipsum denique motum, omnes alium ex alio posse generari, omnes necessitudine quadam inter se aptos et connexos esse, "ostendens" (ut Lucreti verbis utar)

> corpuscula materiai
> ex infinito summam rerum usque tenere
> undique protelo plagarum continuato.

Quod si ipse continuo tenore totam tanti ingeni vim rerum naturae cognoscendae intendisset; ille profecto qui luci electricae novum splendorem addidit, talium rerum obscuritati etiam maiorem lucem attulisset. Ceterum ille qui non modo legum scientiam sed scientiarum quoque leges optime interpretatus est, iure optimo legum doctor hodie creabitur; duplicis palmae laudem meritus, vestro omnium plausu iure excipietur Wilelmus Robertus Grove.

In introducing Dr. William Spottiswoode the Public Orator said:—

Societatis Britannicae scientiarum finibus proferendis praeses ille quem Regiae quoque Societatis praesidem hodie salutamus, fines quam amplos mathematicorum regno assignaverit, meministis omnes qui anno proximo orationem illam Dubliniensem audivistis. Imperium neque temporis neque spatii finibus terminatum illis dedit quos nonnunquam iuvat quasi oceani infiniti propter litora calculos numerare, nonnunquam in purum illud caelum, regionem illam inexplicabilem evolare, ubi spatium multiplex extenditur, ubi nodi tantum abest ut solvi ut ne necti quidem possint. Ipse ne Europae quidem philosophorum finibus contentus, Indorum quoque doctrinam mathematicam et antiquam linguam sacram exploravit; Asiae et Europae confinia bis lustravit, lustrata litteris mandavit. Populi in usum, ordine quam lucido lucis et coloris leges ipse illustravit; quot aliorum libros e prelo suo regio in lucem emisit, et sua et nostra cum Academia privilegiorum communium iure adhuc aliquatenus coniunctus; quanta denique liberalitate, et ministrorum suorum et populi universi liberaliter educandorum causa, pro virili parte laboravit. Ut viro integerrimo, titulis plurimis aliunde cumulato, nostri quoque tituli mantissa accedat, duco ad vos Wilelmum Spottiswoode.

Of Prof. H. J. S. Smith he said:—

Pariter iniquum esse existimavit Aristoteles ab oratore rerum omnium rationes accuratas exigere, atque mathematicum ad persuadendum apposite dicentem tolerare. Atqui ipse exemplar egregium *μαθηματικοῦ πιθανολογοῦντος* libenter admiratus esset, si in senatu Oxoniensium flumen orationis aureum fundentem hunc geometriae professorem audire potuisset, qui nomine duplici, et linguarum antiquarum et scientiarum mathematicarum peritia, cathedra illa dignus est quam Savilius ille, et Chrysostomi editor et interpres Euclidis, primus occupavit, occupatam annuo reditu in perpetuum ornavit. Tertii quidem ordinis linearum enumerationem Newtonus ille noster olim Latine conscripsit, hic autem, quarti ordinis lineis eadem lingua descriptis, e certamine toti Europae ab Academia Berolinensi proposito, duplicis palmæ particeps discessit. Quanta igitur spe et expectatione libros illos de recentiore quae dicitur geometria, de subtilioribus numerorum